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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/764,409

01/23/2004

B. Mark Hirst

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7590

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EXAMINER

LAXTON, GARY L

ART UNIT

PAPER NUMBER

2838

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/764,409

Applicant(s)

HIRST, B. MARK

Examiner

Gary L. Laxton

Art Unit

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/6/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Specification

1. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

2. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

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3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because of the lack of proper content and language. Correction is required. See MPEP § 608.01(b). See also the proper format for content and language of an abstract noted above.

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

6. Claim 39 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 34 already recites an AC/DC converter.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 11-24 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 recites the limitation "said configurations" in line 6. There is insufficient antecedent basis for this limitation in the claim. Claim 11 recites "at least two" transistor totem-pole configurations, meaning there could be more than two. Therefore, when the applicant refers to "said configurations", it is unclear whether the applicant is referring to the "at least two" configurations that were positively recited or whether the applicant is referring to any other configurations that may or may not exist. The examiner assumes the applicant is referring to the "at least two" configurations and nothing more. Claims 12-24 inherit the same through dependency.

Claims 13-16, line 1 of all the claims; again, "said transistor configurations" is unclear whether the applicant is referring to the "at least two" or whether the applicant is referring to any other transistor configurations that may or may not exist. The examiner assumes the applicant is referring to the "at least two" configurations and nothing more.

Claims 14 and 15 recite the limitations "some of the transistors of the configurations" in line 2. There is insufficient antecedent basis for this limitation in the claim. The applicant has not claimed that the configurations contain any number of transistors.

Claim 17 recites the limitation "said transistors" in line 1. There is insufficient antecedent basis for this limitation in the claim. Same problems as claims 14 and 15. The applicant has not claimed any number of transistors only configurations.

Claim 43 recites the limitation "the primary side" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-3, 5, 7, 9, 25, 31-36, 39, 41, 43, 44, 45, 47, 49 and 51 are rejected under 35 U.S.C. 102(b) as being anticipated by Andersen (WO 02/089303 – cited by applicant).

Claims 1-3, 5, 7, 9, 25, 31-36, 39, 41; Andersen discloses a power converter, figure 16; the power converter includes a capacitor (1603a), the capacitor (1603a) is coupled in the converter so as to drive a primary of a transformer (T1) without signal rectification. The capacitor is adapted to switch between charging and discharging operation at different portions of a current cycle. Obviously, the capacitor is adapted to switch between charging and discharging operation at or substantially near zero current (i.e. i.e. AC input waveform). AC input and DC load (Vout) for a DC consuming device. Full wave rectification.

Claims 43, 44, 45, 49 and 51; means for converting from an AC voltage to a DC voltage, figure 16; the means for converting including a means for isolation (1610), the means for isolation including a primary and a secondary; the means for converting being coupled so that, in operation, AC to DC voltage rectification does not occur on the primary of the means for isolation.

11. Claims 1-3, 5, 7, 9, 11, 18, 20, 22, 24, 25, 31-36, 39, 41, 43, 44, 45, 47, 49 and 51 are rejected under 35 U.S.C. 102(b) as being anticipated by Herbert (US 6,115,267).

Claims 1-3, 5, 7, 9, 11, 18, 20, 22, 24, 25, 31-36, 39 and 41; Herbert, figure 8, discloses a power converter that includes a capacitor (113 or 115), the capacitor is coupled in the converter so as to drive a primary of a transformer (123) without signal rectification. The capacitor is adapted to switch between charging and discharging operation at different portions of a current cycle (i.e. AC input waveform). Obviously, the capacitor is adapted to switch between charging and discharging operation at or substantially near zero current. AC input and DC load (Vout) for a DC consuming device. Full wave rectification. At least two transistor totem-pole configurations (143, 145, 147, 149); one of the configurations coupled to an AC line (171) and another of the configurations coupled to an AC neutral (123); a capacitance device (113, 115) coupled between the configurations (via 123) to drive a primary of an isolation transformer (123).

Claims 43, 44, 45, 49 and 51; means for converting from an AC voltage to a DC voltage, figure 8; the means for converting including a means for isolation (27), the means for isolation including a primary and a secondary; the means for converting being coupled so that, in

operation, AC to DC voltage rectification does not occur on the primary of the means for isolation.

12. Claims 1-3, 5, 7, 10-18, 20, 22, 24-36, 39, 41-43, 47, 49, 51 and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Huang et al (US 6,344,979).

Claims 1-3, 5, 7, 10-18, 20, 22, 24-36, 39, 41-42; Huang et al disclose a power converter, figure 4; the power converter includes a capacitor (C_s), the capacitor (C_s) is coupled in the converter so as to drive a primary of a transformer (130) without signal rectification (e.g. since the circuit receives a DC input voltage (V_{in}), there is no need for signal rectification). The capacitor is adapted to switch between charging and discharging operation at different portions of a current cycle. Obviously, the capacitor is adapted to switch between charging and discharging operation at or substantially near zero current. AC input and DC load (V_{out}) for a DC consuming device. Full wave rectification. At least two transistor totem-pole configurations (figure 12: S1, S2 & S3, S4); one of the configurations coupled to an AC line (L_s) and another of the configurations coupled to an AC neutral ($1/2 V_{in}$); a capacitance device (C_s) coupled between the configurations (via L_M , L_s) to drive a primary of an isolation transformer (L_M). The power converter comprises an AC/DC converter (L_s , C_s , L_M , D1, D2, Co, Vo, Ro).

Claims 43, 47, 49, 51 and 52; means for converting from an AC voltage to a DC voltage (L_s , C_s , L_M , D1, D2, Co, Vo, Ro), at least figure 10; the means for converting including a means for isolation (L_M), the means for isolation including a primary (C_s , L_s) and a secondary (D1, D2); the means for converting being coupled so that, in operation, AC to DC voltage rectification does not occur on the primary of the means for isolation.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 4, 6, 37, 38, 46 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andersen (WO 02/089303 – cited by applicant) in view of Walsh et al (US 5,872,983).

Andersen discloses the claimed invention in regards to claims 1, 34 and 43 supra, except for wherein the power converter is incorporated on a motherboard and except for wherein the DC power consuming device comprises at least one of a fax, printer, scanner, and copier.

Motherboards comprising power supplies to provide power to peripheral devices such as printers is very well known in the art as a method of providing power to the components in computer systems. Walsh et al, for example, teach a motherboard comprising a power supply and connected to a fax, printer, scanner, or copier in order to provide an electronic computer system with power management to provide power requirements to peripheral devices such as faxes, printers, scanners or copiers.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the power supply of Andersen to be integrated on a motherboard and to provide power to a fax, printer, scanner or copier as taught by Walsh et al in order to supply power to the fax, printer, scanner, or copier from a computer system.

15. Claims 4, 6, 19, 21, 37, 38, 46 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herbert (US 6,115,267) in view of Walsh et al (US 5,892,983).

Herbert discloses the claimed invention in regards to claims 1, 34 and 43 supra, except for wherein the power converter is incorporated on a motherboard and except for wherein the DC power consuming device comprises at least one of a fax, printer, scanner, and copier.

Motherboards comprising power supplies to provide power to peripheral devices such as printers is very well known in the art as a method of providing power to the components in computer systems. Walsh et al, for example, teach a motherboard comprising a power supply and connected to a fax, printer, scanner, or copier in order to provide an electronic computer system with power management to provide power requirements to peripheral devices such as faxes, printers, scanners or copiers.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the power supply of Herbert to be integrated on a motherboard and to provide power to a fax, printer, scanner or copier as taught by Walsh et al in order to supply power to the fax, printer, scanner, or copier from a computer system.

16. Claims 4, 6, 19, 21, 37, 38, 46 and 48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al (US 6,344,979) in view of Walsh et al (US 5,892,983).

Huang et al disclose the claimed invention in regards to claims 1, 34 and 43 supra, except for wherein the power converter is incorporated on a motherboard and except for wherein the DC power consuming device comprises at least one of a fax, printer, scanner, and copier.

Motherboards comprising power supplies to provide power to peripheral devices such as printers is very well known in the art as a method of providing power to the components in computer systems. Walsh et al, for example, teach a motherboard comprising a power supply and connected to a fax, printer, scanner, or copier in order to provide an electronic computer system with power management to provide power requirements to peripheral devices such as faxes, printers, scanners or copiers.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the power supply of Huang et al to be integrated on a motherboard and to provide power to a fax, printer, scanner or copier as taught by Walsh et al in order to supply power to the fax, printer, scanner, or copier from a computer system.

17. Claims 8, 23, 40 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andersen (WO 02/089303 – cited by applicant) in view of Balakrishnan (US 6,813,168).

Andersen discloses the claimed invention in regards to claims 1, 34 and 43 supra, except for wherein power converter includes an input pi filter.

Balakrishnan teaches that known power supply techniques employ input EMI filter circuits of varying complexity. The simplest form of input EMI filter is known as a pi filter and is used in low-power power supplies to reduce power supply cost (col. 1 lines 25-35).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the power supply of Andersen to include a pi filter in order to reduce power supply cost as taught by Balakrishnan.

18. Claims 8, 23, 40 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herbert (US 6,115,267) in view of Balakrishnan (US 6,813,168).

Herbert discloses the claimed invention in regards to claims 1, 34 and 43 supra, except for wherein power converter includes an input pi filter.

Balakrishnan teaches that known power supply techniques employ input EMI filter circuits of varying complexity. The simplest form of input EMI filter is known as a pi filter and is used in low-power power supplies to reduce power supply cost (col. 1 lines 25-35).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the power supply of Herbert to include a pi filter in order to reduce power supply cost as taught by Balakrishnan.

19. Claims 8, 23, 40 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al (US 6,344,979) in view of Balakrishnan (US 6,813,168).

Huang et al disclose the claimed invention in regards to claims 1, 34 and 43 supra, except for wherein power converter includes an input pi filter.

Balakrishnan teaches that known power supply techniques employ input EMI filter circuits of varying complexity. The simplest form of input EMI filter is known as a pi filter and is used in low-power power supplies to reduce power supply cost (col. 1 lines 25-35).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the power supply of Huang et al to include a pi filter in order to reduce power supply cost as taught by Balakrishnan.


Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 4,321,662 Yokoyama discloses a power supply circuit with a capacitor at the primary and no rectification.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (571) 272-2079. The examiner can normally be reached on Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (571) 272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Gary L. Laxton
Primary Examiner
Art Unit 2838
7/22/05